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Products
Online stories

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"They may save our honor, our hopes—and our necks."

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Initially hailed "one of the seven wonders of the world," the Willow Run Bomber Plant suffered severe criticism when it was revealed that the factory could not meet production schedules. But by

war's end Henry Ford's mile-long assembly line was producing one B-24 bomber every sixty-three minutes.



This CD-3/C-47 Paratrooper Transport, named "Yankee Doodle Dandy," was the first aircraft restored by the Yankee Air Force, based at Willow Run. Photo Roger L. Rosentreter

Wartime requires home front heroes, as well as battlefield heroes. The American War for Independence produced Robert Morris, the "financier of the Revolution," the man who supplied Washington's army. The Civil War produced Jay Cooke, the super-bond salesman who helped finance the Union cause. World War I home front heroes included Charles Schwab, Bernard Baruch, Thomas Edison and Henry Ford.

The December 1941 Japanese attack on Pearl Harbor prompted an all-out effort to boost industrial production as quickly as possible. General Motors, Curtiss-Wright, Ford, Kaiser, DuPont and Chrysler, among others, quickly established themselves as leading defense contractors. Each company's efforts were publicized to one degree or another, but none received more recognition than Henry Ford, who became one of the nation's prime symbols of wartime production heroics.

Touring Willow Run

Once production began at Willow Run, visitors flocked to tour what one newspaper called "the damndest colossus the industrial world has ever known." Unabashedly proud of Willow Run, Henry Ford often hosted celebrities including politicians, generals and movie stars.

Photos The Henry Ford



President Franklin D. Roosevelt (far left)
September 18, 1942



Representative Clare Booth Luce and other members of the House Military Affairs Committee
November 1943



General James Doolittle (center) and Ford's son,

Henry Ford not only personified his company—he was the company for four decades prior to World War II. During the war the company finally superseded the man in

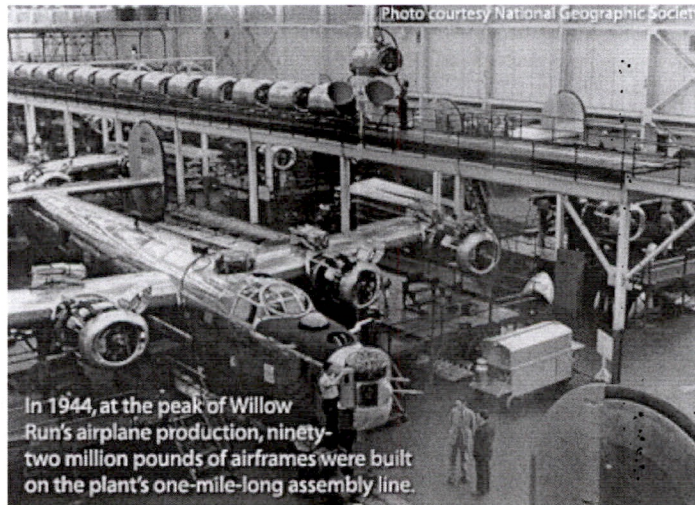
importance. Even so, the wartime focus remained on the man, not the company.

Until August 1942 virtually all of the publicity about Henry Ford and his company was extremely favorable. The press glowed with accounts of Ford's World War I record, his transformation from a pre-World War II pacifist to a war producer, and his real and alleged foresight in gearing his company for military production before America's entry into the war.

But if the press applauded Ford's earlier stance on military production, it almost ran out of superlatives in discussing his contribution to the World War II defense effort. From early 1942, despite all else that Ford was doing, nearly all of this discussion centered around Ford's Willow Run bomber plant, which in the minds of many Americans symbolized both the Ford war effort and America's intent to fill the skies with heavy bombers.

Several factors contributed to the dramatization of Willow Run. At a time when aircraft industrial leaders were highly skeptical of plans to mass-produce airplanes, the plant embodied a daring attempt—the first—to produce aircraft on a full-blown assembly-line system. Moreover, Willow Run was operated by America's premier manufacturer—the man popularly credited with having invented mass production and universally regarded as its foremost exponent. Many people took it for granted that Ford's newest plant, like his renowned Highland Park and River Rouge factories, would blaze new methods of manufacturing and set new production records.

Willow Run also impressed everyone by its size. The main building was 3,200-by-1,180 feet, with more than 2.5 million square feet of floor



In 1944, at the peak of Willow Run's airplane production, ninety-two million pounds of airframes were built on the plant's one-mile-long assembly line.

Photo courtesy National Geographic Society

Edsel
May 29, 1942



Eddie Rickenbacker (far left) January 22, 1943



French General Henri Giraud
July 15, 1943



Vice-president Henry A. Wallace
July 24, 1943



U.S. Treasury Secretary Henry Morgenthau, Jr. (left) and Ford Motor Company production chief Charles Sorensen (center) 1943

space—more floor area than the prewar airplane manufacturing factories of Consolidated Aircraft Corporation, Douglas Aircraft Company and Boeing Aircraft Company combined. "There seems to be no end to anything," enthused one journalist. "Like infinity, it stretches everywhere into the distance of man's vision."

Completed in 1941, the plant was the largest factory in the world under a single roof, and remained so until the 1943 completion of Chrysler's mammoth, but less publicized, Chicago aircraft engine plant. (The Chrysler plant was less publicized for two reasons. It produced an engine, rather than a plane. Also, the plant, along with its parent Chrysler Corporation, was managed by unknowns; Walter P. Chrysler died in 1940.)

Apart from its size, Willow Run was assigned one of the war's glamour products—the four-engine, long-range B-24 bomber, one of the biggest, fastest and most destructive aircraft in the world. Amid the gloom of 1942, the United States looked with hope to the B-24 (labeled the Liberator by the British) and its companion bomber, the B-17. "These planes," declared *Fortune* magazine in April 1942, "represent our supreme bid to regain the initiative. They may save our honor, our hopes—and our necks."

Willow Run, located near Ypsilanti, about thirty miles west of Detroit, began limited parts production in November 1941. By the time the United States entered the war, however, no part of the factory was complete. The main building and the flying field were not completed until early 1942. But the plant, except for the relatively small area where parts production was underway, was in a state of turmoil as tools were received, fixtures set up and supervisors and untrained employees tried coping with an alien undertaking. The task was aggravated by a severe housing shortage near the Willow Run vicinity and the length of time required—an hour or more each way—for Detroit workers to commute to and from their jobs.

Willow Run's problems were ignored or glossed over in the hundreds of news stories and editorials about the huge plant in early 1942. Instead, the press dwelt on the size of the factory and the scope of its operations, referring to it as the "most enormous room in the history of man," the "largest building in the history of the world" and the "mightiest wartime effort ever made by industry." The plant was described as a "marvelous factory" by the *Boston American*, an "amazing bomber plant" by the *New York Sun*; a "U.S. miracle" by the nineteen newspapers of the Scripps-Howard chain and by other publications as "Henry Ford's miracle," "one of the seven wonders of the world," "the greatest show on earth" and as the "damndest colossus the industrial world has ever known." Dozens of

newspapers declared that Willow Run spelled ruin for the Axis countries. "It is a promise of revenge for Pearl Harbor," said a Detroit paper. "You know when you see Willow Run that in the end we will give it to the Japanese good."

If praise of the plant itself indicated that Ford had wrought yet another miracle, statements and forecasts about how soon and how many bomber would flow from the facility confirmed this impression a hundredfold. Most press reports stated that B-24s would roll off the assembly line "before June 1." A radio broadcast beamed to Manila Bay, Philippines, in February 1942, reported that Ford was already producing "astronomical" numbers of planes for the U.S. Army Air Corps. The broadcast spurred embattled American and Filipino troops on the Bataan Peninsula and Corregidor Island to start a "Bomber for Bataan" fund; some servicemen pledged a month's pay to the futile enterprise.

Many of the stories about Willow Run reported that the plant, once production began, would build bombers at the "unprecedented" and "unbelievable" rate of "one every two hours," "one per hour," "two per hour," "dozens daily," "en masse" and "one every few minutes," just like cars. (Compare these figures to the 169 B-24s built in 1941 by the plane's designer, Consolidated Aircraft.) Several publications even reported that 1,000 B-24s would emerge from the factory every twenty-four hours. The most exaggerated estimate of the plant's future production appeared in the usually conservative *New York Herald Tribune*, which boasted, "Willow Run annually will produce planes by the tens of thousands and eventually, if required, by the hundreds of thousands."

These statements were premature and highly inaccurate. Willow Run did not produce a plane until July 1942, and that one was a knockdown sent to a Douglas Aircraft assembly plant in Tulsa, Oklahoma. The first flyaway was not turned over to the United States Army until September 10, 1942.

The Ford Motor Company should have refuted the statements or at least cautioned against overoptimism. It did neither, and the paeans of praise continued unabated. Some of the plaudits were initiated by starry-eyed visitors to the plant. The president of Peru told reporters, "This plant is wonderful . . . It will bring quick victory." Captain Randolph Churchill, son of the British prime minister, assured the press that "if Adolf Hitler could see Willow Run, he'd cut his throat right now." Sir Oliver Lyttleton, Britain's minister of production, noted that if Hitler and Goering visited Willow Run they "Would have thrown in their hands, or blown out their brains." He concluded, "Five men with the imagination of Henry Ford would end this

war within a period of six months."

The myth that Willow Run was performing production miracles exploded in August 1942 when James H. "Dutch" Kindelberger, the blunt president of North American Aviation, told a startled group of reporters that Willow Run, despite all of the talk, had yet to manufacture an airplane.

Kindelberger's statement was quickly picked up and expanded on "The March of Time," a *Time* magazine-sponsored national radio newscast, and in *Time*'s sister publication, *Life*. Although pressed to deny or confirm the charges made by Kindelberger, inexplicably neither the Ford company nor the War Department offered immediate comment. The press, led to believe that Willow Run was building complete bombers (at the rate of one per hour, according to some reports), was baffled.

The press remained perplexed and was barred from the plant until November. By then planes were being built, both knockdowns and flyaways, and net production totaled fifty-six. Meanwhile, in September President Franklin Roosevelt and his wife, Eleanor, secretly toured Willow Run. Following the visit the Office of Censorship issued conflicting reports on whether or not the president had seen bombers in production.

In January 1943 the government's War Production Board officially criticized Willow Run's performance for the first time. The factory's primary problem, according to the board, was a shortage of manpower, the plant found it difficult to hire and keep competent workers.

The board's report unleashed a barrage of criticism, leading many people across the country to call the plant "Willit Run?"—a name allegedly coined by rival aircraft manufacturers. This criticism prompted Senator Harry Truman, chairman of the Senate Committee Investigating the National Defense Program, to conduct an immediate inquiry into Willow Run production. "There has been so little production," snapped Truman, "as to amount to virtually none."

Criticism notwithstanding, Willow Run's production was mounting—31 planes in January 1943, 75 in February, 148 in April and 190 in June. The press was congratulatory. "At long last," declared *Business Week*, "America is finding its faith in Henry Ford and Willow Run reestablished. And this time it rests on the solid fact of bomber production." In April, Charles E. Wilson, vice-chairman of the War Production Board, told reporters after touring Willow Run that the plant was "on the beam." The Willow Run plant will be turning out 500 planes a month by the time the next snow flies." Unfortunately, the day after Wilson's visit snow fell in

Detroit.

On July 10 the Truman committee issued its long-awaited findings on Willow Run. The report acknowledged that "some delay had to be expected" in building a large number of "huge and complicated" airplanes such as the B-24. But it also was critical of Willow Run's performance, which fueled rumblings of dissatisfaction; in September the Army Material Command suggested the government unseat Henry Ford and take over the management of the factory.

During the last few months of 1943, as the giant plant began living up to its press notices of 1941 and the first half of 1942, the threat of a government takeover faded. Bomber production, which stood at 190 in June 1943, increased to 231 in August, 308 in October and 365 in December. In October a War Production Board report on the aircraft industry revealed that "whereas Willow Run was one of the poorest producers last Fall it is now one of the best." The report added that "production per man at Willow Run has risen about 40 times in the last year."

As the plant entered a period of glory in 1944 its production reports were impressive. In March Willow Run produced its three thousandth bomber. On April 16 Ford announced that Willow Run, starting that previous February, had achieved its long-sought goal—the production of "approximately one bomber an hour." By July 1 Willow Run had built five thousand bombers, half of them in the first six months of 1944. At the same time, it was reported that "the automotive type precision tooling at Willow Run had resulted in such uniformity of production that more than half of all of the Ford-built Liberators were accepted for delivery on their maiden flights," an unusually high percentage of plane approval.

As many of the early production boasts of Ford spokesmen and the press began coming true, the plant and company officials were lauded to the skies. In April 1944 Senator Truman, after visiting the bomber plant, called Henry Ford "the production genius" of the United States. In mid-April, following the announcement of the bomber-per-hour production rate, dozens of newspapers hailed Willow Run as "the war production miracle that has been wrought in Detroit" and as the plant that furnished "a sky-full of bombers to wreck the Nazi war machine." Henry Ford was accorded similar praise. "His achievement is tremendous," declared the *Asheville* (North Carolina) *Citizen* in a representative editorial. "He symbolizes the remarkable industrial techniques which have made this nation one vast armory."

During the remainder of 1944 and through 1945 hundreds of stories on Willow Run appeared in newspapers and magazines. Many of the phrases used to describe the plant were as effusive as, and reminiscent of, those published during the first half of 1942—"a symbol of American ingenuity," a "magnificently-tooled colossus," a "product of inventive genius," "one of the world's great monuments of production genius," a "production miracle" and the "miracle production story of the war."

In 1944, Willow Run's peak production year, the plant built 92 million pounds of airframes, far more poundage than had ever poured out of any one plant in one year and 4.6 percent of all U.S. airframe production during the years 1940-44. Willow Run's 1944 airframe production almost equaled Japan's total airframe poundage for that year—and was approximately half that of either Germany, Great Britain or the Soviet Union. Moreover, the factory's assembly-line production methods permitted Ford to deliver Liberators to the government for \$137,000 each in 1944, compared to \$238,000 two years earlier.

The plant's highest monthly bomber output, 428, was attained in August 1944. After September, when the plant was geared to make 650 bombers a month (or 9,000 planes per year) it did not produce to its fullest capacity (the War Department having ordered cutbacks on B-24 production in favor of building the larger B-29 and B-32 bombers at other factories).

The total number of B-24s built at Willow Run was 8,685. The last bomber, named the "Henry Ford," moved off the assembly line on June 24, 1945. A few minutes before the plane was to be towed from the plant, Henry Ford requested that his name be removed from the nose of the ship and that employees sign their names in its place.

Although Ford contributed far less to the overall war effort than General Motors (GM), the public believed that he had done more to win the war than GM or any other automobile company. A national sample of public opinion by Elmo Roper in July 1944 showed that 31 percent of the American people believed that Ford was contributing more to the war effort than any other automaker, as opposed to 21 percent for GM. In the spring of 1945 Roper found that Henry Ford ranked second only to Henry J. Kaiser, a major West Coast shipbuilder, as the man to have done more to win the war than any other American, not counting Presidents Roosevelt and Truman and military figures Ford received approximately twice as many votes as the men ranked third and fourth in the pool. Donald M. Nelson, chairman of the War Production Board, and James F. Byrnes,

director of war mobilization.

In reality, Henry Ford's contribution to his company's war effort was limited, and later was said to be nil by Ford's top manufacturing executive, Charles Sorensen. Sorensen's view, according to Sorensen, was shared during the war by highly-placed Washington officials including Charles E. Wilson and President Roosevelt.

Ford undoubtedly gave more attention to Willow Run than any other of his wartime plants. But his contribution to Willow Run's success is debatable. Edsel Ford said in 1943 that his father "put a lot of his ideas" into the project. Conversely, Sorensen countered that the octogenarian was simply "the glorified leader" and "had nothing to do with the program." He would, said Sorensen, "have a look at how things were going on at Willow Run, but talk about its problems went in one ear and out the other."

What is certain is that Ford approved the idea of building the plant, passed on major policy decisions affecting it and had a keen interest in its construction and efforts to move it into production. He was a frequent, almost daily, visitor to the factory during the first two years of the war. Numerous photographs show him inspecting assembly lines and crawling under and around B-24s. He also fretted incessantly over the delays in bomber production.

The statement by the head of a California aircraft plant that "Ford would drop \$100 million to get his bombers out" probably was a correct assessment of the magnate's attitude toward the B-24 program. Ford's pride was hurt when the press referred to his plant as "Willit Run?"; he was vastly pleased when in late 1943 the factory refuted its critics. In Willow Run's banner year, 1944, when Ford's physical and mental health perceptibly deteriorated, he was seen less frequently at the plant. The following year his precarious health prevented him from attending the ceremony marking the end of bomber production. All factors considered, Sorensen's evaluation of Ford's contribution to the bomber effort seems harsh but not unjust. Willow Run was a miracle plant, but Henry Ford was not a miracle man, and the wartime belief that he was is one of the great myths of World War II.

Neither the Ford Motor Company, nor any other person or company won the home front war single-handedly. A massive team effort was required, and perhaps the greatest heroes of all, at least in the aggregate, were the millions of workers who toiled in defense plants across the nation.

World War II, as we look back on it, seems somewhat larger than life. It

was a time of heroes, miracles and myths, both on the battlefield and on the home front. Both America's productive capacity and its people were tested as never before—or since. Every important test was met by companies like Ford and by millions of ordinary people who produced the materials of war and filled home front needs.

Today, most Americans look back with satisfaction and pride, perhaps even with some nostalgia, on World War II's great home front achievements. That is because no other country, friend or foe, came close to matching the home front heroics—and miracles—of America in the "Big One."

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